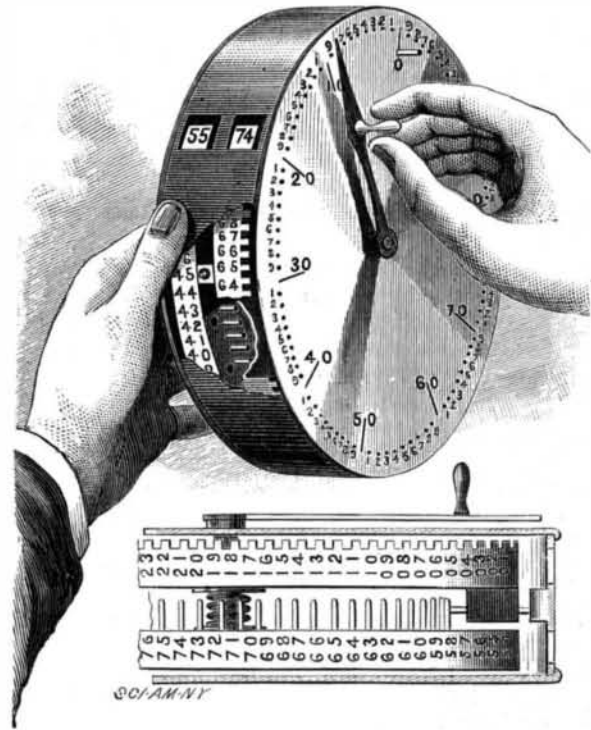


IMPROVED ADDING MACHINE.

The engraving represents an improved adding machine recently patented by Mr. Philip Neary, of McLean, N. Y. It consists of two revolving disks numbered on the edge, and in mechanism for operating the disks so that the numbers may be mechanically added. Through the center of the case extends a shaft, and on the face of the case, in a circle drawn from the shaft center, are inscribed a series of figures, from 0 to 99, inclusive, consecutively, as shown, and rigidly secured to the front end of the shaft is a hand or pointer, which is kept in its initial position at 0 against a stop by a coiled spring.

**NEARY'S ADDING MACHINE.**

Two circular disks mounted loosely on the shaft are peripherally numbered. The disk which registers units and tens, is provided with a flange on the inside of which are cut ratchet teeth, which register with and correspond in number to the numbers on the periphery of the disks. Into these ratchet teeth a spring pawl which is secured to the arm catches. When the pointer is turned to the right, the disk remains stationary; but when the pointer is turned to the left, the pawl engages with one of the ratchet teeth and revolves the disk with the shaft. The second disk is loosely mounted upon the shaft at a suitable distance from the first disk, and, like it, is peripherally numbered. Projecting from its inner face are a hundred tappet pins, which register with the numbers inscribed upon the periphery.

The first disk is provided with a spring tappet rod which projects from its outer face, and is so situated as to be normally out of contact with the tappet pins on the second disk.

This tappet rod moves the second disk one number each time it is brought into operation. The normal position of the machine is when the pointer is at 0 and the ciphers on the disks register with the apertures in the case. In adding a number of figures—as, for example, 20, 17, and 13—the pointer will be turned from 0 on the dial to the left until it reaches 20, and then released, and the spring, E, allowed to carry back to 0, then to the left again to 17, and so on for the next number; and owing to the pawl and ratchet teeth previously described, the disk, F, will be revolved from point to point, and the sum "50" will appear through the units and tens aperture. When the sum of the figures added equals or exceeds 100, the second disk will be also moved one point, or as many times as there are hundreds in the sum, and the amount will be read through both apertures, as will be very readily understood.

Further information in regard to this invention may be obtained by addressing the inventor as above.

Phototypes on Copper.

Copper is much better adapted to this process than zinc. It is covered with a thin film of asphalt, and when dry well washed with water, then covered with a thin film of bichromated albumen. After drying and exposing under a negative it is washed in water, colored with aniline until only the lines of the drawing remain; it is next washed with pure water, dried, and the soluble asphalt dissolved with benzine. After drying it is etched.

Menhaden Fishing.

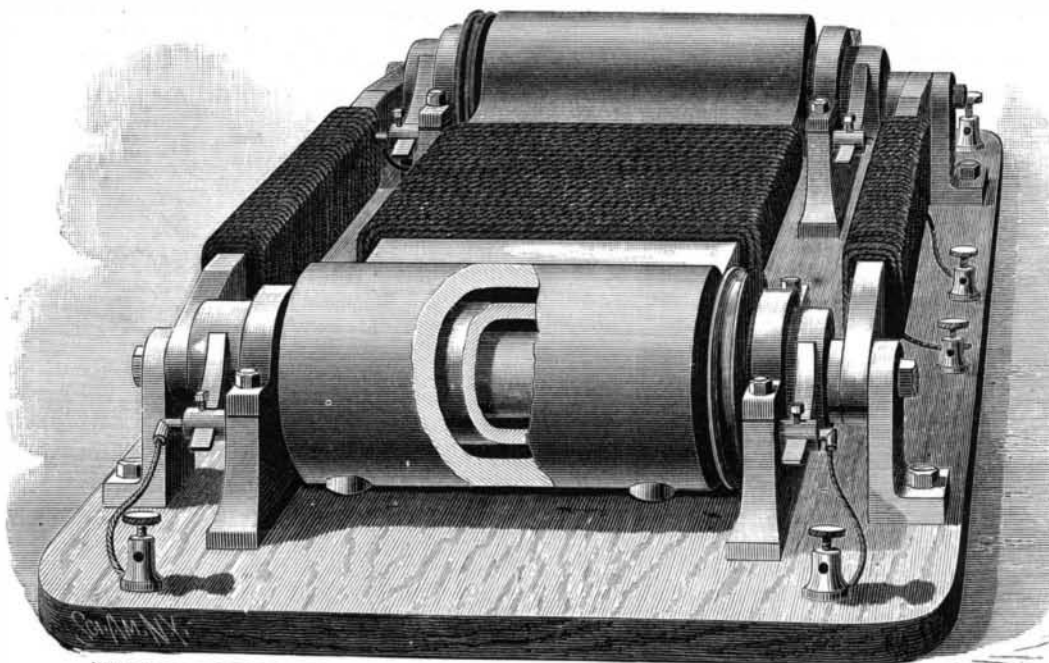
The capture of the bony fish, or menhaden, which formerly was confined to seining "along shore" by resident farmers for manuring purposes, has become an industry that involves the employment of considerable capital and the use of expensive machinery. The object of this fishery—rather sea reaping—is primarily the production of oil, and secondarily the manufacture of an agricultural fertilizer. The fish are distilled for their oil, which is used by carriers for "filling" hides, and the solid remainder is sold as a fertilizer, for which it is well adapted. A letter in the *New Haven Palladium* says:

The life of a bony fish catcher is a hard one at best. In pleasant weather it is wearisome, and in unpleasant weather it is simply detestable. The fish have been pursued so closely in Long Island Sound that comparatively few large bunches of them can be surrounded with seines there now. Hence, the steamers have to sail miles to find them. For instance, menhaden are now being taken in the largest quantities off Barnegat, on the New Jersey coast; and consequently the Milford men have to leave here in the middle of the night and pass up the Sound, through Hell Gate, down the Narrows, and along the beach for hours before striking them. Perhaps they do not get a scale till noon. The seining, which is the hardest kind of work, is kept up till dark, and then, if the vessel is loaded, she is headed at once for Milford, reaches here late at night, is discharged, and before morning is well on her way toward the fishing grounds again. Good fishing allows no rest to the hands. They work early and late, are soaked through with water, and sleep nights in a hot and not very sweet smelling forecastle. The men earn all the money they get. Perhaps the only redeeming feature of their life is their fare. Bony fishermen are very good livers. Good cooks are employed, and the store bill of one of the steamers would run an ordinary shore hotel in fine style.

NEW DYNAMO ELECTRIC MACHINE.

The engraving represents a dynamo electric machine whose armature has neither wire nor bars, and in which no commutator is required, as the current flowing from the machine is all in one direction. This machine is remarkable for its simplicity and its economy in the use of power. It delivers a current of very low electromotive force, suitable for plating and for incandescent electric lighting. When used for the latter purpose, a small high tension machine may be employed to advantage to supply a current to the field magnets.

The machine consists of a field magnet having hollow cylindrical polar extremities, B, in each of which a tubular armature, C, revolves, the bearing of the armature being at the ends of the cylindrical poles of the field magnet. An auxiliary field magnet composed of the side bars and cylindrical pole extensions, G, extending through the armature axially completes the arrangement, and acting together with the outer magnet produces a strong magnetic field surrounding the armature on all sides. The current is conducted away from the ends of the armature by wires connecting

**DELAFIELD'S UNIPOLAR DYNAMO-ELECTRIC MACHINE.**

with the armature journals, and with springs bearing on the ends of the armature. The springs are applied to insure a constant connection.

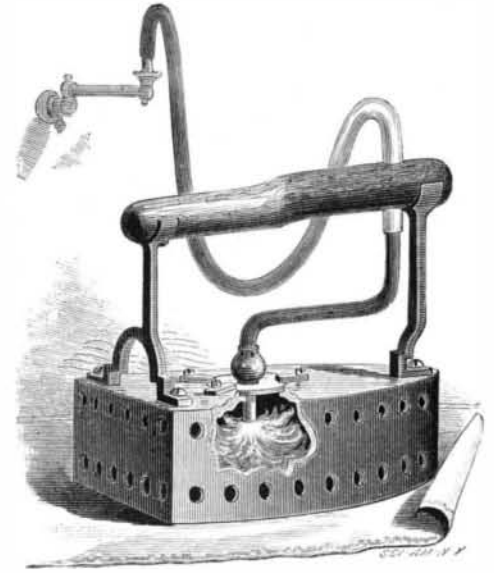
In operating the machine the current from one armature may be used to excite the field magnets, or the current from both armatures may be taken through the wire of the field magnets, or as stated above, the field magnets may be excited by a small high tension dynamo, and the entire current of the armatures may be applied to outside work.

The current from this machine is uniform and continuous, and always in the same direction, so that there are no reversals or interruptions and consequently no sparks.

This novel dynamo has been patented by Mr. A. Floyd Delafield, of Noroton, Conn.

GAS HEATED LAUNDRY IRON.

The laundry iron shown in the cut is heated continuously by gas, the heat being uniform at any required temperature. The body of the iron is hollow, and its sides are perforated with two rows of holes, and in the top is inserted an inverted Bunsen burner, the flame of which is projected on to the upper surface of the lower part of the iron. The burner receives its supply of gas through a flexible tube connected with any suitable gas supply. A rigid pipe extends from the burner through the non-conducting handle of the iron near one end. The burner is provided with a mixing chamber in which the gas and air are mixed in suitable proportions for the perfect combustion of the gas. By simply turning the cock in the gas supply pipe, the heat may be varied at pleasure.

**PEDDER'S LAUNDRY IRON.**

This iron has many advantages, among which are the economy of fuel, uniformity of temperature, saving of time usually consumed in changing and heating irons, avoiding the necessity of a hot fire in the house in warm weather. This invention has been patented by Mr. J. N. Pedder, Avenue Q, between 25th and 26th Streets, Galveston, Texas.

New Use for Old Oil Cans.

For striking the centers of a four span bridge over the Tamal River, in the Midnapore district, there was required for holding the sand an entirely closed receptacle, which would gradually collapse as the weight came upon it—bags, open cylindrical or rectangular boxes being unsuitable under the conditions. After considerable thought, it struck the author that empty kerosene oil tins would answer the purpose, and if so, hardly anything could be cheaper, as they

only cost one anna per tin. The weight which the tins filled with sand would sustain without collapsing having been ascertained by experiment, a sufficient number were placed on the top of masonry pillars and were inclosed by masonry in mud mortar, so as to prevent their being tampered with. This was also needed as a reserve support in case of a tin bursting through faulty construction. The kerosene oil tin "sand boxes" were made to carry the centers by templates and pillar plates, as usual; and to allow of the immediate collapse on the sand being removed, the templates were made of such a size as to lie within the box. In striking the centers, the casing bricks were first removed. Coolies, armed with short and sharp pointed pegs of hard wood and ordinary hand hammers, were stationed at each box. At a given signal every man struck a hole at the side of his box, and on the pegs being simultaneously removed, and another hole

made at the top of the tin, the sand ran out. The lowering, which was very easy and gradual, could be arrested at any point by allowing the sand to accumulate in front of the holes. One side could also be lowered quicker than the other by simply driving another hole into the box and increasing the flow of sand. The maximum weight supported by one of the kerosene oil tins used was, by calculation, 7.7 tons. No bulging or crushing was perceptible before the sand was run out.—*Professional Papers on Indian Engineering.*

THE Forsyth scale works have received an order for a forty-ton extension track scale for the Jacobs & Hazelton Coal Co., and a similar order from the Clark & Price Coal Co.